Draft Civil GPS Requirements Correlation Matrix

SYSTEM CAPABILITIES AND CHARACTERISTICS	SORD	ORD THRESHOLD	ORD OBJECTIVE
Position, Velocity, and Timing Accuracy			
1. SPS Accuracy			
(a) Enroute through Non-precision Approach	100m, 2drms	100m, 2drms (95th percentile horizontal-radial	100m, 2drms (95th percentile horizontal-radial
(b) Category I (CAT I) Precision Approach			
(b1) Horizontal Path-Following Error (PFE)	Not Specified	7.9m	5.3m
(b2) Horizontal Path-Following Noise (PFN)	Not Specified	3.8m	3.8m
(b3) Vertical PFE	Not Specified	4.3m	2.8m
(b4) Vertical PFN	Not Specified	0.9m	0.9m
(c) Category II (CAT II) Precision Approach			
(c1) Horizontal PFE	Not Specified	5.5m	4.4m
(c2) Horizontal PFN	Not Specified	3.4m	3.4m
(c3) Vertical PFE	Not Specified	1.8m	1.3m
(c4) Vertical PFN	Not Specified	0.5m	0.4m
(d) Category III (CATIII) Precision Approach			
(d1) Total System Error (TSE) at Touchdown (crosstrack)	Not Specified	8.2m	8.2m
(d2) TSE at touchdown	Not	229m	229m

(longitudinal)	Specified		
2. SPS Velocity		2m/s NTE	2m/s NTE
3. SPS Time Transfer from UTC		340 nsec (95%)	340 nsec (95%)
4. Service Availability	98%	98%	99.999% (DOT)
5. Coverage	98%	98%	99.90%
6. Service Reliability	98%	98%	99.97%
7. Fix Rate	continuous	1 Hz	5 Hz
8. Fix Dimension	3D + Time Sync	3D PVT + Time Sync	3D PVT + Time Sync
9. System Capability	unlimited	unlimited	unlimited
10. Geodetic Datum/Ellipsoid	Earth-centered, Earth-fixed, WGS-84	WGS-84, ability to operate with DMA approved regional datums	WGS-84, ability to operate with DMA approved regional datums
Integrity			
11. Navigation Signal Monitoring		Ability to monitor SPS and PPS signals worldwide	Ability to monitor SPS and PPS signals worldwide
12. Enroute through Non-precision approach			
(a) Probability of hazardously misleading information	Not specified	10^{-7} per hour from signal-in-space (SIS) 10^{-3} to 10^{-6} per hour for avionics, depending on aircraft category	10^{-7} per hour from SIS, 10^{-3} to 10^{-6} per hour foravionics, depending on aircraft category
(b) Time to alarm	Not specified	8 seconds from SIS 2 seconds	8 seconds from SIS 2 seconds

		from avionics	from avionics
(c) Continuity of Navigation	Not specified	$1\text{-}10^{-8}$ per hour from SIS, $1\text{-}10^{-3}$ to $1\text{-}10^{-6}$ per hour for avionics, depending on aircraft category	$1\text{-}10^{-8}$ per hour from SIS, $1\text{-}10^{-3}$ to $1\text{-}10^{-6}$ per hour for avionics, depending on aircraft category
(d) Continuity of Fault Detection	Not specified	$1\text{-}10^{-5}$ per hour from SIS	$1\text{-}10^{-5}$ per hour from SIS
13. CAT I Precision Approach			
(a) Probability of HMI	Not specified	$4x\ 10^{-8}$ per approach from the SIS	$4x\ 10^{-8}$ per approach from the SIS
(b) Time to Alarm	Not specified	6 seconds from SIS	6 seconds from SIS
(c) Continuity	Not specified	$1\text{-}5.5x10^{-5}$ per approach, (150 s per approach) SIS	$1\text{-}5.5x10^{-5}$ per approach, SIS
14. CAT II Approach			
(a) Probability of HMI	Not specified	$4x\ 10^{-8}$ per approach from the SIS	$4x\ 10^{-8}$ per approach from the SIS
(b) Time to Alarm	Not specified	2 seconds from SIS	1 seconds from SIS
(c) Continuity	Not specified	$1\text{-}5.5x10^{-5}$ per approach SIS	$1\text{-}5.5x10^{-5}$ per approach, SIS
15. CAT III Approach			

(a) Probability of HMI	Not specified	4x 10^{-8} per approach from the SIS	4x 10^{-8} per approach from the SIS
(b) Time to Alarm	Not specified	2 seconds from SIS	1 seconds from SIS
(c) Continuity	Not specified	1-4x10^{-5} per approach and 10^{-7} during flight and between 200 feet and end of rollout (SIS)	1-4x10^{-5} per approach and 10^{-7} during flight and between 200 feet and end of rollout (SIS)
16. Probability of Undetected Error		10^{-7} /hour	10^{-7} /hour
Security and Survivability			
17. Jamming	Classified	Operate in jammed environment	Operate in Jammed environment
(a) Interference	Not specified	New add-in	